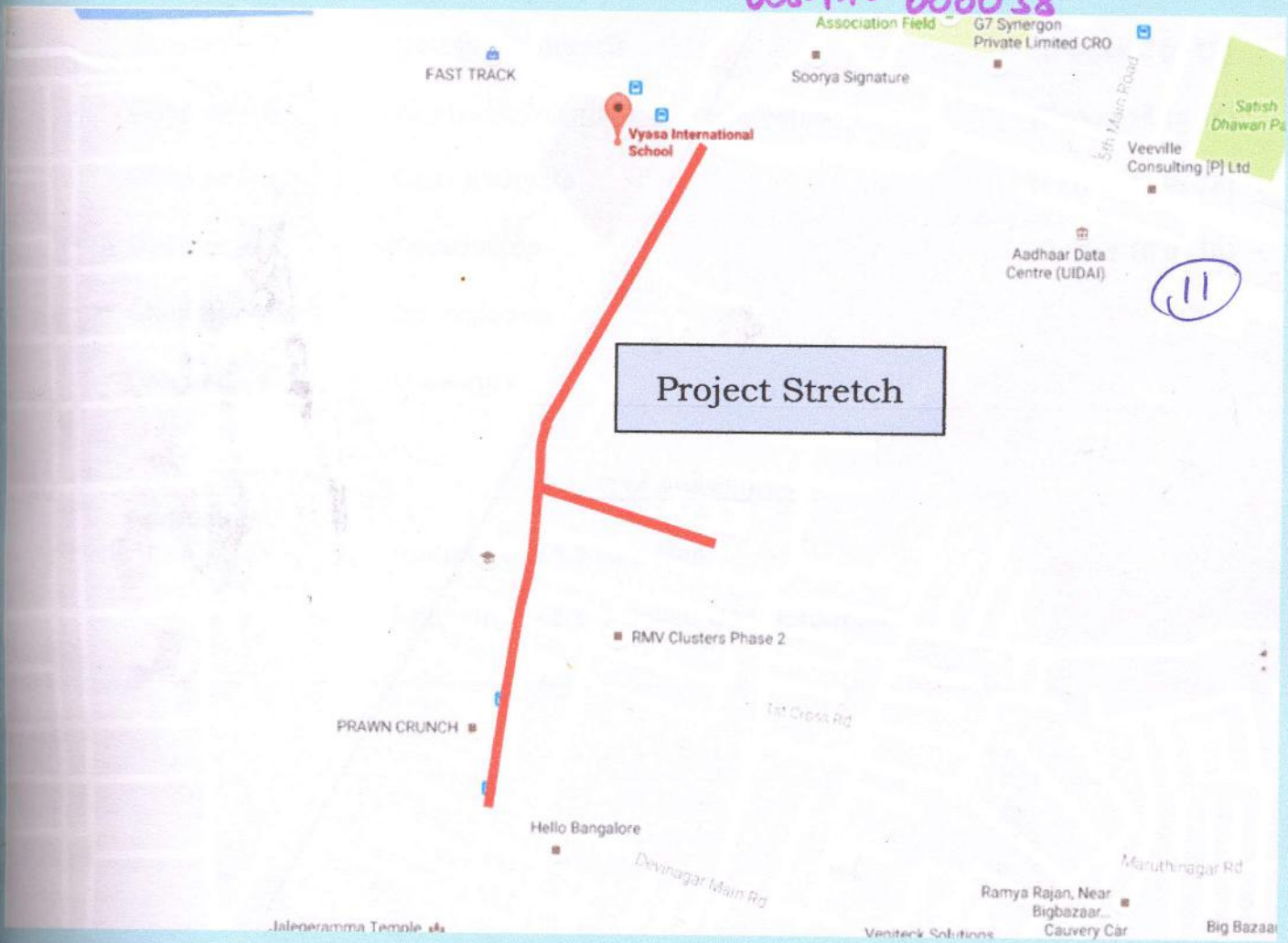
1 to 16 pages

BRUHAT BANGALORE MAHANAGARA PALIKE

Improvements To Road, Drain And Footpath In LKR Nagar Main Road And Cross Roads In Ward No.8, Kodigehalli

008-17-000038



Detailed Project Report

October 2016

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
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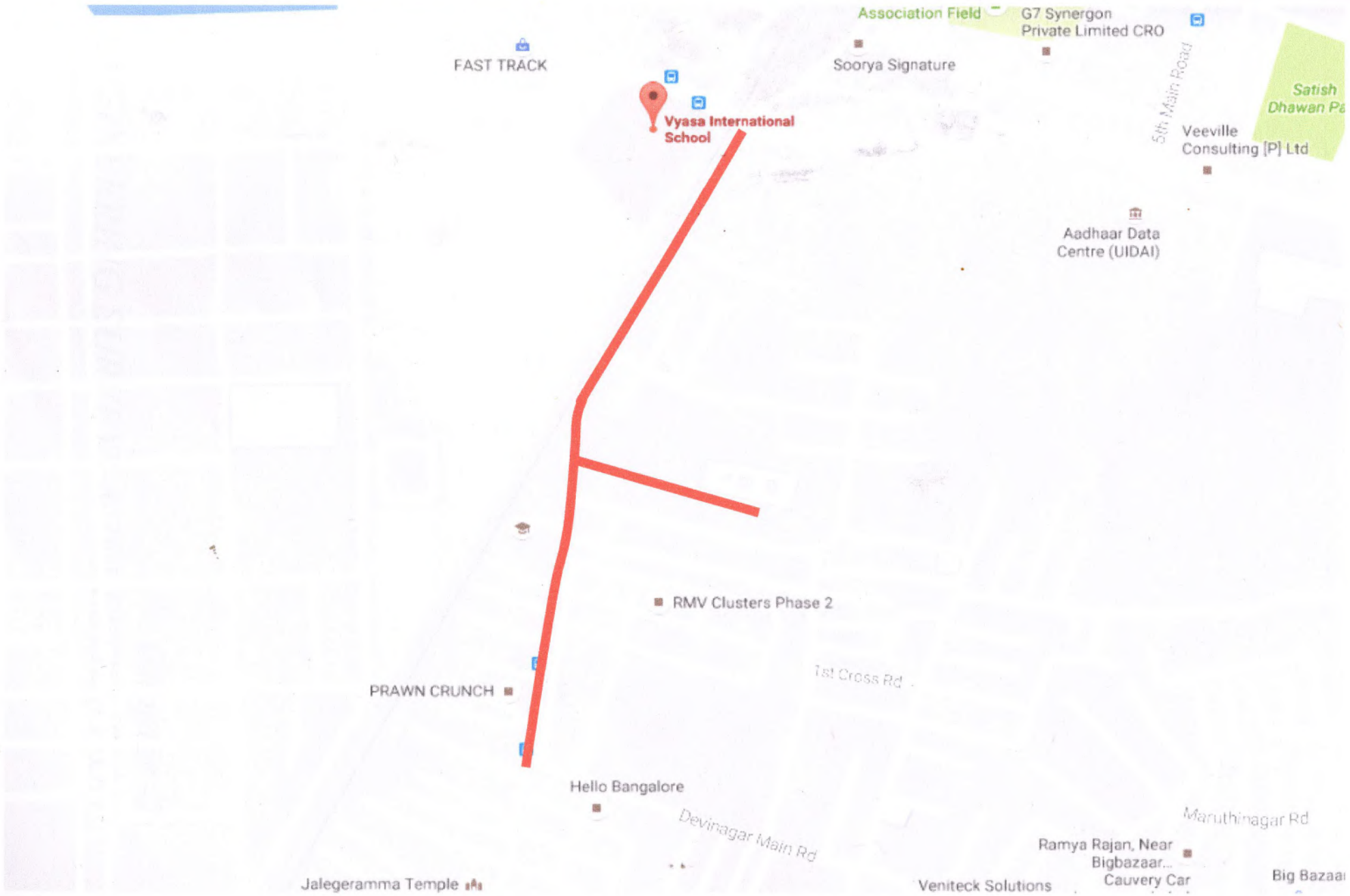
KEY MAP – LKR Nagara Main Road



Annexure A.5.1

DETAILED COST ESTIMATE

Improvements To Road, Drain And Footpath In LKR Nagar Main Road And Cross Roads In Ward No.8, Kodigehalli

BRUHAT BANGALORE MAHANAGARA PALIKE

Project: Improvements to Road,Drain and Footpath in LKR nagara main road and cross roads in ward No.8 Kodigehalli

Est Cost: =95.0Lakh

Sl. No.	Description of work	Unit	No.	Length m	Breadth m	Depth m	Quantity	Rate in Rs.	Amount in Rs.
1	Removing & Refixing Stone slabs of drains and Pointing in C.M(1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)								
	BS Slab Drain	Sqm							
	LKR nagar main Road								
	RHS								
	Drain Cover		1	100.00	1.20	--	120.00		
	for footpath		1	210.00	2.10	--	441.00		
	LHS								
	Drain Cover		1	150.00	1.20	--	180.00		
	Consider 25% for missing and Damage Slabs						-185.25		
							555.75	80.56	**44771.22**
2	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neatly dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)								
	LKR nagar main Road	Cum							
	LHS								
	Ch0-350		1	308.00	1.10	1.10	372.68		
	RHS								
	Ch0-410		1	389.00	1.10	1.10	470.69		
	Saucer Drain								
	LHS								
	Ch0-350		1	308.00	0.45	0.25	34.65		
	RHS								
	Ch0-410		1	389.00	0.45	0.25	43.76		
	Catchpit at every 15m								
	LHS		23	0.45	0.45	0.80	3.73		
	RHS		25	0.45	0.45	0.80	4.05		
	Culvert								
	Desilt		7.00	7.00	0.80	0.50	19.60		
	New Culvert								
	Ch35 LHS		1.00	7.00	1.60	1.30	14.56		
	Ch220 RHS		1.00	7.50	1.60	1.30	15.60		
	Desilt for SWD secondary drain								
	in LKR nagar main road		1.00	180.00	1.50	1.15	310.50		
							1289.82	192.92	**248831.79**
3	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)								
	Bed Concrete	Cum							
	LKR nagar main Road								
	LHS								
	Ch0-350		1.00	308.00	1.10	0.10	33.88		
	RHS								
	Ch0-410		1.00	389.00	1.10	0.10	42.79		
	Saucer Drain								
	LHS								
	Ch0-350		1.00	308.00	0.45	0.05	6.93		
	RHS								
	Ch0-410		1.00	389.00	0.45	0.05	8.75		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Catchpit at every 15m								
	LHS		23.00	0.45	0.45	0.10	0.47		
	RHS		25.00	0.45	0.45	0.10	0.51		
	New Culvert								
	Ch35 LHS		1.00	7.00	1.60	0.15	1.68		
	Ch220 RHS		1.00	7.50	1.60	0.15	1.80		
							96.80	5348.76	**517784.04**
4	KSRB 4-6.1: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for foundations, footings, bases of columns for mass concrete including cost of all materials, labour complete as per specifications. Specifcation No. KBS 4.6.2 (P.No.15, I.No.4.28 of PW, P&IWTD SR 2016-17)								
	Bottom Slab	Sqm							
	New Culvert								
	Ch35 LHS		2.00	7.00		0.25	3.50		
	Ch220 RHS		2.00	7.50		0.25	3.75		
							7.25	244.86	**1775.24**
5	KSRB 4-6.4: Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for vertical surfaces such as walls at any thickness, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour complete as per specifications. Specification No.KBS 4.6.2 (P.No.15, I.No.4.31 of PW,P&IWTD SR 2016-17)								
	Side Walls	Sqm							
	New Culvert								
	Ch35 LHS		4.00	7.00	--	0.900	25.20		
	Ch220 RHS		4.00	7.50	--	0.900	27.00		
							52.20	310.58	**16212.28**
6	Providing and laying cement concrete using 20mm and downsize granite coarse aggregates and fine aggregates of ready mixed concrete (RMC) for RCC works laid in 15cms thick layers and well compacted vibrating, curing, finishing with necessary cement mortar, with all lead and lifts etc., complete (exclusive of cpost of steel and fabricaton charges) Ready Mixed Cement Concrete M 20 for Raft foundation, Column, Footing, main and secondary beams. (P.No.18, I.No.4.48 of PW, P&IWTD SR 2016-17)								
	New Culvert	Cum							
	Bottom Slab								
	Ch35 LHS		1.00	7.00	1.40	0.25	2.45		
	Ch220 RHS		1.00	7.50	1.40	0.25	2.63		
	Side Walls								
	Ch35 LHS		2.00	7.00	0.25	0.90	3.15		
	Ch220 RHS		2.00	7.50	0.25	0.90	3.38		
	Saucer Drain								
	LHS								
	Ch0-350		1.00	308.00	0.45	0.10	13.86		
	RHS								
	Ch0-410		1.00	389.00	0.45	0.10	17.51		
							42.97	6231.74	**267746.71**
7	Providing laying plain/ reinforced cement concrete M20 Grade for Box Drain walls of thickness 10cm to 20cm including centering shuttering for work etc. complete as per approved drawing and design MORTH specification No. 1500, 1700, 2200. (P.No.265, I.No.37.59.2 of PW, P&IWTD SR 2016-17)								
	Drain	Cum							
	in LKR nagar main road								
	Bottom Raft								
	LHS								
	Ch0-350		1.00	308.00	0.90	0.15	41.58		
	RHS								
	Ch0-410		1.00	389.00	0.90	0.15	52.52		
	Catchpit at every 15m								
	LHS		23.00	0.45	0.45	0.15	0.70		
	RHS		25.00	0.45	0.45	0.15	0.76		

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
	Walls								
	LHS								
	Ch0-350		2.00	308.00	0.15	0.60	55.44		
	RHS								
	Ch0-410		2.00	389.00	0.15	0.60	70.02		
	Catchpit at every 15m								
	LHS		69.00	0.45	0.15	0.45	2.10		
	RHS		75.00	0.45	0.15	0.45	2.28		
							225.39	11032.48	**2486577.57**
8	KSRB - 4.9.2: Providing TMT steel reinforcement Fe500 for R.C.C work including straightening, cutting, bending, hooking, palcing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining memebrs wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost of materials, labour, HOM of machinery complete as per specifications. Specification No. KBS 4.6.3. (P.No.17, I.No.4.46.2 of PW, P&IWTD SR 2016-17)								
	Consider 50Kgs/cum for item No. 7 only RCC Drain Qty	Tonne		225.39	0.050	--	11.27		
	Consider 80Kgs/cum for item No. 6 only RCC Culvert Qty	Tonne		11.60	0.080	--	0.93		
							12.20	59413.00	**724838.60**
9	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 10cms thick (P.No.25, I.No.5.31.2 of PW, P&IWTD SR 2016-17)								
	Drain Cover	Sqm							
	LKR nagar main Road								
	LHS								
	Ch0-350		1.00	208.00	0.90	--	187.20		
	RHS								
	Ch0-410		1.00	239.00	0.90	--	215.10		
	for secondary drain(SWD)cover		1.00	180.00	2.40	--	432.00		
	For Missing and damaged BS Slab Cover						185.25		
							1019.55	825.74	**841883.22**
10	KSRB 5-9 : Providing chamfering edges to stone slab 2.5 cms. wide as per specifications, (only chamfered length shall be recorded) KBS 5.1.13 (P.No.24, I.No.5.22 of PW,P&IWTD SR 2016-17)								
	LKR nagar main Road								
	For Missing and damaged BS Slab Cover		1.00	344.00	3.00	--	1032.00		
	LHS								
	Ch0-350		1.00	346.67	3.00	--	1040.00		
	RHS								
	Ch0-410		1.00	398.33	3.00	--	1195.00		
	for secondary drain(SWD)cover		1.00	300.00	6.00	--	1800.00		
							5067.00	37.10	**187985.70**
11	Providing One line dressing to granite stone slab/ granite stone masonry as per speciication (P.No.23, I.No.5.17 of PW,P&IWTD SR 2016-17)								
	LKR nagar main Road								
	Old Granite slab quantity						555.75		
	New Granite slab quantity						1019.55		
							1575.30	577.70	**910050.81**
12	Providing and fixing **RCC Precast cover slab of 250mm thick** for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)								
	Culvert Slab	Sqm							
	Ch35 LHS		1.00	7.00	1.50	--	10.50		
	Ch220 RHS		1.00	7.50	1.50	--	11.25		
							21.75	4764.00	**103617.00**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
13	Providing and fixing M S Grating								
	LKR nagar main Road	Sqm							
	Catchpit at every 15m								
	LHS		23.00	0.45	0.45	--	4.66		
	RHS		25.00	0.45	0.45	--	5.06		
							9.72	6647.00	**64608.84**
14	KSRRB M2600-5.(iv) Providing and filling joint sealing compound as per drawings and technical specifications with coarse sand and 6 per cent bitumen by weight complete as per specifications MORTH Specification No. 2605(P.No.243, I.No.31.5 of PW,P&IWTD S.R 2016-17)								
	LKR nagar main Road	Rmtr							
	Saucer Drain								
	LHS								
	Ch0-350		1.00	308.00	--	--	308.00		
	RHS								
	Ch0-410		1.00	389.00	--	--	389.00		
							697.00	24.38	**16992.86**
15	KSRRB M300-14. Excavation for roadwork in soil with hydraulic excavator of 0.90 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to embankment location and complete as per specifications. MORTH Specification No.301 (P.No.143, I.No.19.14 of PW,P&IWTD S.R 2016-17)								
	Road Portion	Cum							
	For Widening								
	Bad reaches		6.00	3.00	2.30	0.20	8.28		
			5.00	2.60	3.20	0.20	8.32		
							16.60	154.76	**2569.02**
16	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of								
	Road Portion	Cum							
	For Widening								
	Bad reaches		6.00	3.00	2.30	0.20	8.28		
			5.00	2.60	3.20	0.20	8.32		
							16.60	1768.08	**29350.13**
17	KSRRB M 500-6, Providing and applying primer coat with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)								
	Road Portion	Cum							
	For Widening								
	Bad reaches		6.00	3.00	2.30	--	41.40		
			5.00	2.60	3.20	--	41.60		
							83.00	27.56	**2287.48**
18	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17)								
	Road Portion	Sqm							
	Ch0-410		1	410.00	7.50	--	3075.00		
							3075.00		
	Deduct prime coat						-83.00		
							2992.00	3.18	**9514.56**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
19	KSRRB M500-7 : Providing and applying tack coat using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)								
	For Laying DBM	Sqm							
	Ch0-410		1	410.00	7.50	--	3075.00		
	For Bell mouth and Approaches		6	5.00	6.00	--	180.00		
	For Laying BC								
	Ch0-410		1.00	410.00	7.50	--	3075.00		
	For Bell mouth and Approaches		6	5.00	6.00	--	180.00		
							6510.00	11.66	**75906.60**
20	KSRRB M500-16. Providing and laying dense bituminous macadam 50-75mm compacted thickness with 4.5% VG-30 Bitumen using 40/60 TPH capacity H.M.P, using crushed aggregates of grading II, premixed with VG 30 grade bituminous binder and transporting the hot mix to work site, laying with mechanical paver to the required grade level and alignment rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table								
	For Laying DBM	Cum							
	Ch0-410		1.00	410.00	7.50	0.05	153.75		
	For Bell mouth and Approaches		6.00	5.00	6.00	0.05	9.00		
							162.75	6435.26	**1047338.57**
21	KSRRB M500-19. Providing and laying bituminous concrete 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)								
	For Laying BC	Cum							
	Ch0-410		1.00	410.00	7.50	0.04	123.00		
	For Bell mouth and Approaches		6.00	5.00	6.00	0.04	7.20		
							130.20	7270.54	**946624.31**
22	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)								
	Center lane Marking	Sqm	0.5	410.00	0.15	--	30.75		
	Edge line		2	410.00	0.15	--	123.00		
							153.75	542.72	**83443.20**
23	Providing Raiwater harvesting pits for Drains(Sub estimate enclosed)								
	LKR nagar main Road	Sqm							
			2	13.00	--	--	26.00		
							26.00	21000.00	**546000.00**
24	KSRRB M800-35. Supply and Installation of Moulded Shank Raised Pavement Markers made of polycarbonate and ABS(Acrylonitrile Butadiene Styrene) moulded body and reflective panels with micro prismatic lens capable of providing total internal reflection of the light entering the lens face and shall support a load of 16000kg tested in accordance to specification of category A of MORTH Circular No RW/NH/33023/10-97-Do III Dt 11.06.1997. The Height, width and length shall no exceed 50mm, 100mm, and 102mm and with minimum reflective area of 13 Sqcm on each side and the slope to the base shall be 35 degree. The strength of detachment of the integrated cylindrical shanks, (of diameter not less than 19mm and height not less than 30 mm) from the body is to be a minimum vakue of 500 kg. Fixing will be by drilling holes on the road for the shanks to go inside, without nails and using epoxy resin based adhesive as per manufacturer's recommendation and complete as directed by the engineer with 2 years warranty for the reflectivity from the original manufacturer is mandatory along with necessary test certification from the certified laboratory. Third party test certificates from a reputed test laboratory shall be submitted with seal and signature in originals. (P.No.189, I.No.24.41 of PW,P&IWTD SR 2016-17)								
	LKR nagar main Road	Nos							
			3	70.00	--	--	210.00	359.34	**75461.40**

Sl. No.	Description of work	Unit	No.	Length	Breadth	Depth	Quantity	Rate in Rs.	Amount in Rs.
				m	m	m			
25	Manufacturing, Supply & Fixing of Retro- Reflection Road name sign board single Arrow size 1.98X0.9m size made out if wide angle cube corner micro prismatic grade sheeting confirming to IRC 67:2010 & type XI standards of ASTM D 4956-09 specifications and fixed over 2mm thick aluminium sheet back support frame of stainless stell supported by 30NB 1.2mm thick stainless steel pipe all around and 65NB 1.5mm thick pipe vertical post (AISI 202 Grade) firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 30cmx30cmx45cm etc.complete. The information message shal be made out of cut out letters in blue colour transparent overlay film as per IRC 67-2010 Guidelines, 7 years pre-qualification warranty for retro reflective sheeting from the original sheeting manufacturer and a certied copy of three years outdoor exposure report from an independent test lab for the product offered shall be submitted by the contractor. The sign board shall be Retro-Reflective Type XL								
	Approved Rate	Each	2	--	--	--	**2.00**	28250.00	**56500.00**
							Total Construction Cost		**9308671.147**
26	Add cost of **Waste Plastic** @ 8% of Bitumen weight								
	Bitumen = 141 kg/cum		--	--	--	--	**1468.66**	27.00	**39654.00**
	Waste = 130.20X 141 X 8 / 100 =1468.66								
27							**Cost towards Preparation of DPR LS**		**55853.00**
28							**Cost towards PMC / Third Party inspection LS**		**93087.00**
								Sub Total	**9497265.15**
29								**Miscellaneous and rounding off**	**2734.85**
								Total	**9500000.00**

Certificate.

1 The rates adopted based on the PWD SR, Bangalore circle for year 2016-17.
2 The provisions made in the estimate are necessary and essential.
3 The workspot was inspected and work is found to be necessary.
4 The area comes within the Bruhat Bangalore Mahanagara Palike limits.

For Tejus Consultants

Assistant Engineer

Assistant Executive Engineer

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

Executive Engineer

Executive Engineer
Byatarayanapura Division
BBMP, Bangalore-92

Technical Sanction
Accorded For ....95.00 lakhRs.
Head of A/C.....P3158.....
CER NO :....157.... Dt:..04/03/17

TA

CE (YNK)

Chapter - 6
CONCLUSION

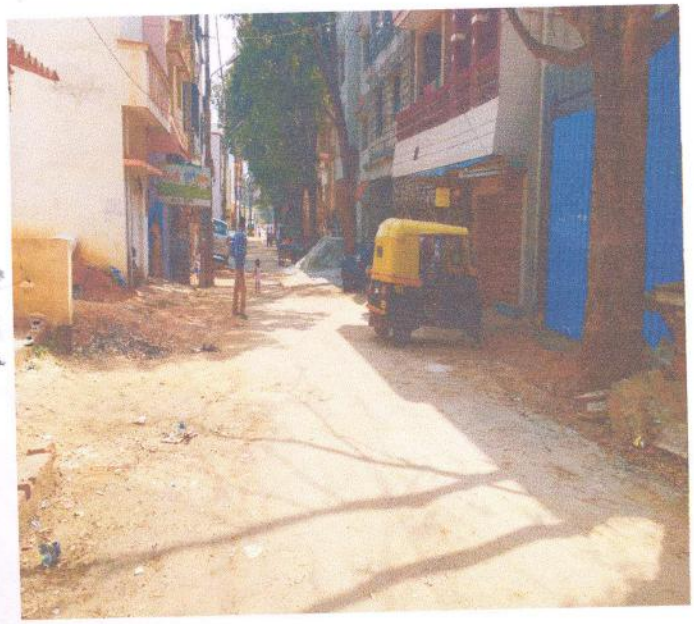
Chapter - 6
CONCLUSION

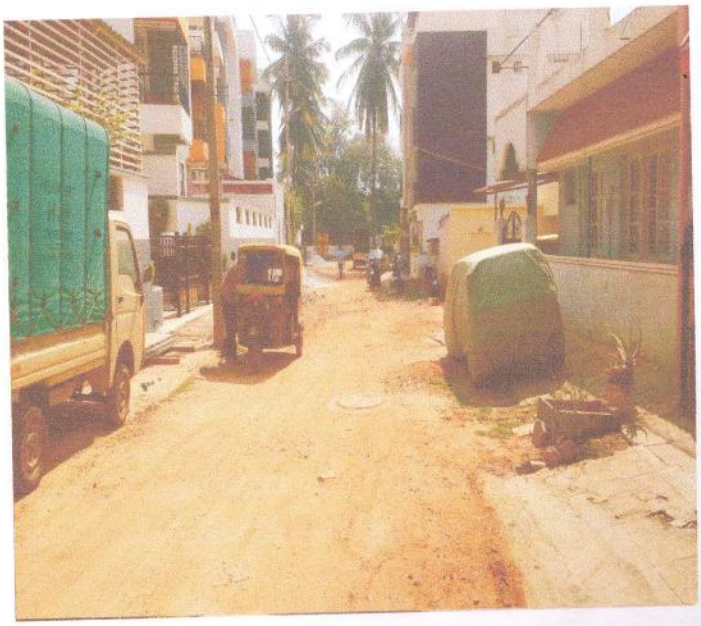
The Project includes Improvements to Road, Drain and Footpath in LKR nagar main road and cross roads in ward No.8 Kodigehalli. The Project area is located near Maruti Nagar in Northern part of Bangalore City. Major attractions along the stretch are Prawn Crunch, Bishop Sergeant Central School, Casa Dream, Vyasa International School and Jademuneshwara Complex. The Stretch provides vital connectivity to and from movement in Devinagar and surrounding area. The spurt in the development of Bangalore City with creation of ITPL, Tech Parks, Layouts, and Education Institutions has resulted in change of the Land Use Pattern. Further, Bruhat Bangalore Mahanagara Palike has decided to take up the development of various Arterial and Sub Arterial roads in and around Bangalore City where the intensity of traffic has increased significantly and there is a requirement for augmentation of capacity for safe and efficient movement of traffic. This being the Background, Bruhath Bangalore Mahanagara Palike has proposed for the following works in order to provide Seamless Traffic Flow and to Increase Level of Service along the Project Stretch.

For the proposed Improvement Scheme, total Cost of the Project has been worked out as Rs. 95.00 Lakh.

Chapter - 7
PHOTOPAGES

EXISTING VIEWS OF LKR NAGAR MAIN ROAD





Assistant Executive Engineer.
Kodigehalli Sub Division.

Chapter - 8
DRAWINGS

BRUHAT BANGALORE MAHANAGARA PALIKE

IMPROVEMENTS TO ROAD,DRAIN AND FOOTPATH IN LKR NAGAR MAIN ROAD AND CROSS ROADS IN WARD NO.8, KODIGEHALLI

NOTE:-

1. ALL DIMENSION & LEVELS ARE Mts. UNLESS OTHERWISE MENTIONED.

DATE	No. OF PRINTS	PRINTS ISSUED TO	SIGN

DATE	REVISION	DESCRIPTIONS	SIGN

LEGEND:-

Road
Drain
Contour
Levels
Power line
Telephone pole
Street light
Electric pole
Tree
Building
Bore Well
Drain level
Compound wall
Culvert
Coconut Tree
Road level

CONSULTANT :

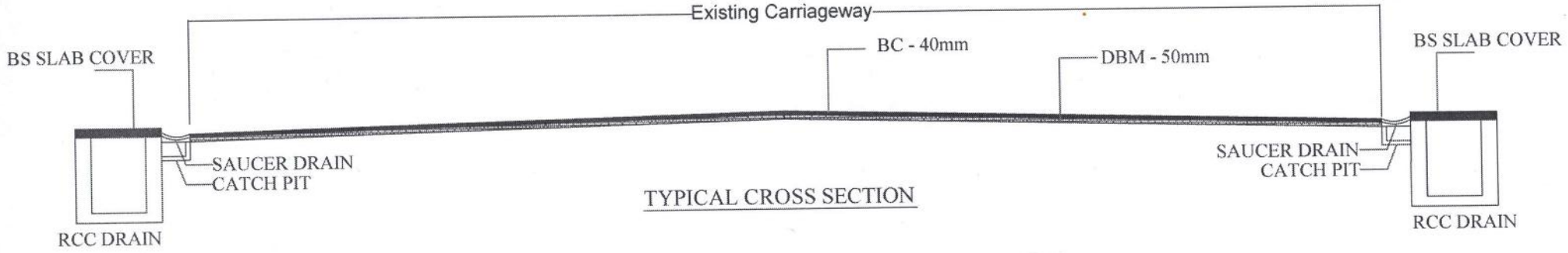
TEJUS CONSULTANTS

No.58 MIG, 6th Cross, 3rd Main
1st Stage, Basaveshwaranagar
Bangalore-560079
TEL: 080 - 23287532
email: tejusconsultants@gmail.com

TITLE: STRIP PLAN 1/1

BRUHAT BANGALORE MAHANAGARA PALIKE

IMPROVEMENTS TO ROAD,DRAIN AND FOOTPATH IN LKR NAGAR MAIN ROAD AND CROSS ROADS IN WARD NO.8, KODIGEHALLI



TYPICAL CROSS SECTION

NOTE:-

1. ALL DIMENSION & LEVELS ARE Mts. UNLESS OTHERWISE MENTIONED.

DATE	No. OF PRINTS	PRINTS ISSUED TO	SIGN

DATE	REVISION	DESCRIPTIONS	SIGN

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TITLE: TYPICAL CROSS SECTION